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PTO/SB/18 (08-00)

Approved for use through 10/31/2002. OMB 0651-0032  
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| <b>UTILITY<br/>PATENT APPLICATION<br/>TRANSMITTAL</b><br><br><i>(Only for new nonprovisional applications under 37 CFR 1.53(b))</i> |  | <b>Attorney Docket No.</b> 282.032   |  |
|   |  | <b>First Named Inventor</b> DAVID J. BEEBE ET AL   |  |
|   |  | <b>Title</b> BIOCHEMICAL SIGNAL TRANSFER USING LIPOSOMES IN A CHANNEL OF A MICROFLUIDIC DEVICE |  |
|   |  | <b>Express Mail Label No.</b> EV313040236US  |  |

|  |   |
|--|---|
| <b>APPLICATION ELEMENTS</b><br><br><i>See MPEP chapter 600 concerning utility patent application contents.</i> | <b>ADDRESS TO:</b> Mail Stop - Box Patent Application<br>Commissioner for Patents<br>P.O. Box 1450<br>Alexandria, VA 22313-1450 |
|--|---|

|   |   |
|---|---|
| 1. <input checked="" type="checkbox"/> Fee Transmittal Form (e.g., PTO/SB/17)<br><i>(Submit an original, and a duplicate for fee processing)</i><br>2. <input checked="" type="checkbox"/> Applicant claims small entity status<br><i>See 37 CFR 1.27</i><br>3. <input checked="" type="checkbox"/> Specification [Total Pages <u>17</u> ]<br><i>(preferred arrangement set forth below, MPEP 1503.01)</i><br>- Descriptive title of the invention<br>- Cross Reference to Related Applications<br>- Statement Regarding Fed sponsored R & D<br>- Reference to sequence listing, a table, or computer program listing appendix<br>- Background of the Invention<br>- Brief Summary of the Invention<br>- Brief Description of the Drawings (if filed)<br>- Detailed Description<br>- Claims<br>- Abstract of the Disclosure<br>4. <input checked="" type="checkbox"/> Drawing(s) (35 U.S.C. 113) [Total Sheets <u>5</u> ]<br>5. <input type="checkbox"/> Oath or Declaration [Total Pages <u>    </u> ]<br>a. <input type="checkbox"/> Newly executed (original or copy)<br>b. <input type="checkbox"/> Copy from a prior application (37 CFR 1.63 (d))<br><i>(for continuation/divisional with Box 16 completed)</i><br>i. <input type="checkbox"/> <b>DELETION OF INVENTOR(S)</b><br>Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63 (d)(2) and 1.33 (b).<br>6. <input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76<br>7. <input type="checkbox"/> CD-ROM or CD-R in duplicate, large table or Computer Program<br>(Appendix) | 8. <input type="checkbox"/> Nucleotide and/or Amino Acid Sequence Submission<br><i>(if applicable, all necessary)</i><br>a. <input type="checkbox"/> Computer Readable Form (CRF)<br>b. <input type="checkbox"/> Specification Sequence Listing on:<br>i. <input type="checkbox"/> CD-ROM or CD-R (2 copies); or<br>ii. <input type="checkbox"/> paper<br>c. <input type="checkbox"/> Statement verifying identity of above copies<br><b>ACCOMPANYING APPLICATION PARTS</b><br>9. <input type="checkbox"/> Assignment Papers (cover sheet & document(s))<br>10. <input type="checkbox"/> 37 CFR 3.73(b) Statement <input type="checkbox"/> Power of Attorney<br><i>(when there is an assignee)</i><br>11. <input type="checkbox"/> English Translation Document <i>(if applicable)</i><br>12. <input type="checkbox"/> Information Disclosure Statement (IDS)/PTO-1449 <input type="checkbox"/> Copies of IDS Citations<br>13. <input type="checkbox"/> Preliminary Amendment<br>14. <input checked="" type="checkbox"/> Return Receipt Postcard (MPEP 503)<br><i>(Should be specifically itemized)</i><br>15. <input type="checkbox"/> Certified Copy of Priority Document(s)<br><i>(if foreign priority is claimed)</i><br>16. <input type="checkbox"/> Request and Certification under 35 U.S.C. 122 (b)(2)(B)(i) – Applicant must attached form PTO/SB/35 or its equivalent<br>17. <input checked="" type="checkbox"/> Other: <u>Supplement to Transmittal Letter</u> |
|---|---|

|  |  |
|--|--|
| <b>16. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:</b><br><input type="checkbox"/> Continuation <input type="checkbox"/> Divisional <input type="checkbox"/> Continuation-in-part (CIP) of prior application No: <u>        </u> / <u>        </u><br><br>Prior application information: Examiner <u>                                </u> Group / Art Unit: <u>                                </u><br><b>For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.</b> |  |
|--|--|

|   |  |  |                                 |  |                           |   |  |  |
|---|--|--|---------------------------------|--|---------------------------|---|--|--|
| <b>17. CORRESPONDENCE ADDRESS</b>   |  |  |                                 |  |                           |   |  |  |
| <input type="checkbox"/> Customer Number or Bar Code Label  |  |  |                                 |  |                           | or <input checked="" type="checkbox"/> Correspondence address below |  |  |
| <b>Name</b> Peter C. Stomma   |  |  |                                 |  |                           |   |  |  |
| <b>Address</b> BOYLE, FREDRICKSON, NEWHOLM, STEIN & GRATZ S.C.<br>250 E. Wisconsin Avenue, Suite 1030 |  |  |                                 |  |                           |   |  |  |
| <b>City</b> Milwaukee   |  |  | <b>State</b> WI                 |  | <b>Zip Code</b> 53202     |   |  |  |
| <b>Country</b> USA  |  |  | <b>Telephone</b> (414) 225-9755 |  | <b>Fax</b> (414) 225-9753 |   |  |  |

|  |  |   |  |
|--|--|---|--|
| <b>Name (Print/Type)</b> Peter C. Stomma |  | <b>Registration No. (Attorney/Agent)</b> 36,020 |  |
| <b>Signature</b>                         |  | <b>Date</b> November 4, 2003                    |  |

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Design, Washington, DC 20231.

{00049094.DOC /}

# FEE TRANSMITTAL for FY 2003

Patent fees are subject to annual revision.

**Complete if Known**

Application Number

Filing Date

First Named Inventor

David J. Beebe et al.

Examiner Name

Group Art Unit

Attorney Docket No.

282.032

TOTAL AMOUNT OF PAYMENT

(\$) 448.00

**METHOD OF PAYMENT (check all that apply)**
☒ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☒ Deposit Account

 Deposit Account Number  
 Deposit Account Name

50-1170

Boyle, Fredrickson, Newholm, Stein &amp; Gratz S.C.

The Commissioner is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☒ Credit any overpayments

☒ Charge any additional fee(s) during the pendency of this application

☒ Applicant Claims Small Entity Status See 37 CFR 1.27

☐ Charge fee(s) indicated below, except for the filing fee

to the above-identified deposit account.

**FEE CALCULATION****1. BASIC FILING FEE**

| Large Entity |          | Small Entity |          | Fee Description        | Fee Paid |
|--------------|----------|--------------|----------|------------------------|----------|
| Fee Code     | Fee (\$) | Fee Code     | Fee (\$) |                        |          |
| 101          | 770      | 201          | 385      | Utility filing fee     | 385      |
| 106          | 340      | 206          | 170      | Design filing fee      |          |
| 107          | 530      | 207          | 265      | Plant filing fee       |          |
| 108          | 770      | 208          | 385      | Reissue filing fee     |          |
| 114          | 160      | 214          | 80       | Provisional filing fee |          |

SUBTOTAL (1) (\$) 385

**2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE**

| Total Claims |                    | Extra Claims |       | Fee from below | Fee Paid |
|--------------|--------------------|--------------|-------|----------------|----------|
| Independent  | Multiple Dependent | -20**=       | -3**= |                |          |
| 27           | 3                  | 0            | 0     | 7              | 63       |
|              |                    |              |       |                | -0-      |
|              |                    |              |       |                |          |

| Large Entity |          | Small Entity |          | Fee Description   |
|--------------|----------|--------------|----------|---|
| Fee Code     | Fee (\$) | Fee Code     | Fee (\$) |   |
| 103          | 18       | 203          | 9        | Claims in excess of 20                                    |
| 102          | 86       | 202          | 43       | Independent claims in excess of 3                         |
| 104          | 290      | 204          | 145      | Multiple dependent claim, if not paid                     |
| 109          | 86       | 209          | 43       | **Reissue independent claims over original patent         |
| 110          | 18       | 210          | 9        | **Reissue claims in excess of 20 and over original patent |

SUBTOTAL (2) (\$) 63

\*\* or number previously paid, if greater; For Reissues, see above

**FEE CALCULATION (continued)****3. ADDITIONAL FEES**

Large Entity

Small Entity

| Fee          | Fee          | Fee          | Fee          | Fee Paid   |
|--------------|--------------|--------------|--------------|--|
| Large Entity | Small Entity | Large Entity | Small Entity |  |
| 105          | 130          | 205          | 65           | Surcharge - late filing fee or oath  |
| 127          | 50           | 227          | 25           | Surcharge - late provisional filing fee or cover sheet                     |
| 139          | 130          | 139          | 130          | Non-English specification  |
| 147          | 2,520        | 147          | 2,520        | For filing a request for <i>ex parte</i> reexamination                     |
| 112          | 920*         | 112          | 920*         | Requesting publication of SIR prior to Examiner action                     |
| 113          | 1,840*       | 113          | 1,840*       | Requesting publication of SIR after Examiner action                        |
| 115          | 110          | 215          | 55           | Extension for reply within first month                                     |
| 116          | 400          | 216          | 200          | Extension for reply within second month                                    |
| 117          | 920          | 217          | 460          | Extension for reply within third month                                     |
| 118          | 1,440        | 218          | 720          | Extension for reply within fourth month                                    |
| 128          | 1,960        | 228          | 980          | Extension for reply within fifth month                                     |
| 119          | 320          | 219          | 160          | Notice of Appeal   |
| 120          | 320          | 220          | 160          | Filing a brief in support of an appeal                                     |
| 121          | 280          | 221          | 140          | Request for oral hearing   |
| 138          | 1,510        | 138          | 1,510        | Petition to institute a public use proceeding                              |
| 140          | 110          | 240          | 55           | Petition to revive - unavoidable   |
| 141          | 1,280        | 241          | 640          | Petition to revive - unintentional   |
| 142          | 1,280        | 242          | 640          | Utility issue fee (or reissue)   |
| 143          | 460          | 243          | 230          | Design issue fee   |
| 144          | 620          | 244          | 310          | Plant issue fee  |
| 122          | 130          | 122          | 130          | Petitions to the Commissioner  |
| 123          | 50           | 123          | 50           | Processing fee under 37 CFR 1.17(q)  |
| 126          | 180          | 126          | 180          | Submission of Information Disclosure Stmt                                  |
| 581          | 40           | 581          | 40           | Recording each patent assignment per property (times number of properties) |
| 146          | 740          | 246          | 370          | Filing a submission after final rejection (37 CFR § 1.129(a))              |
| 149          | 740          | 249          | 370          | For each additional invention to be examined (37 CFR § 1.129(b))           |
| 179          | 740          | 279          | 370          | Request for Continued Examination (RCE)                                    |
| 169          | 900          | 169          | 900          | Request for expedited examination of a design application                  |

Other fee (specify)

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3)

(\$)

**SUBMITTED BY**

Name (Print/Type)

Peter C. Stomma

Registration No.  
(Attorney/Agent)

36,020

**Complete (if applicable)**

Telephone

(414) 225-9755

Signature

Date

November 4, 2003

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

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INTELLECTUAL PROPERTY LAW

PETER C. STOMMA  
DIRECT DIAL: 414-225-1673  
PCS@BOYLEFRED.COM

November 4, 2003

Mail Stop - Box Patent Application  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Re: Utility Patent Application  
Inventor(s): David J. Beebe et al.  
Title: *Biochemical Signal Transfer Using Liposomes In A  
Channel Of A Microfluidic Device*  
**USPTO Customer Account No.: 23598**  
Attorney Docket No.: 282.032

Dear Sir:

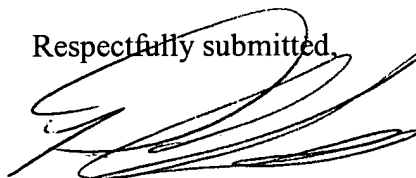
Enclosed is our check in the amount of **\$448.00** in payment of the government filing fee for the enclosed United States patent application, which application includes **10** pages of specification, **27** claims on **6** sheets, **4** Drawings on **5** sheets, and an Abstract of the Disclosure. A Utility Patent Application Transmittal and Fee Transmittal Form PTO/SB/17 (11/00) together with the filing fee are also enclosed. The Declaration and Power of Attorney is not included with the application and will be submitted at a later date.

Applicant is a small entity within the meaning of 37 CFR §§ 1.9 and 1.27 and hereby claims small entity status. The application has Federal Funding No. DOD ARPA F30602-00-2-0570.

Mail Stop - Box Patent Application  
Commissioner for Patents  
November 4, 2003  
Page 2

The Director is hereby authorized to charge payment of any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1170.

Respectfully submitted,



Peter C. Stomma  
Registration No. 36,020

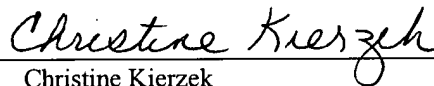
Customer Account - 23598

Certification Under 37 CFR 1.10

Express Mail Label No: **EV313040236US**

Date of Deposit: **November 4, 2003**

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Christine Kierzek

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application Of: )  
)  
DAVID J. BEEBE ET AL. )  
)  
Filed Herewith )  
)  
BIOCHEMICAL SIGNAL TRANSFER )  
USING LIPOSOMES IN A CHANNEL )  
OF A MICROFLUIDIC DEVICE )

**SUPPLEMENT TO TRANSMITTAL LETTER**

Mail Stop - Box Patent Application  
Commissioner For Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This application is being filed pursuant to 37 CFR 1.53(b) and (d). The application includes the specification, at least one claim, the drawings, and the filing fee. The inventors are:

David J. Beebe  
4647 Tonyawatha Trail  
Monona, WI 53716

Jung-Hwa Aura Gimm  
1631 Jefferson Street, #2  
Madison, WI 53711

and

Arnold E. Ruoho  
1209 Brookwood Street  
Madison, WI 53711

Jeffrey S. Moore  
807 Vista Drive  
Savoy, IL 61874

The oath or declaration of the applicants is not included. The declaration will be forwarded promptly upon notification from the U.S. Patent and Trademark Office.

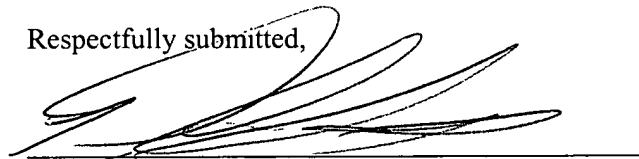
Please address all correspondence to:

**PETER C. STOMMA**  
BOYLE, FREDRICKSON, NEWHOLM, STEIN & GRATZ, S.C.  
250 East Wisconsin Avenue, Suite 1030  
Milwaukee, Wisconsin 53202

Please address all telephone calls to:

**PETER C. STOMMA**  
Phone No.: (414) 225-9755

Respectfully submitted,



Peter C. Stomma, Reg. No. 36,020

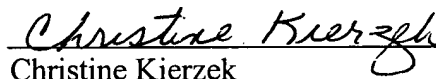
Boyle, Fredrickson, Newholm, Stein & Gratz, S.C.  
250 East Wisconsin Avenue, Suite 1030  
Milwaukee, WI 53202  
(414) 225-9755  
Attorney Docket No: 282.032

## **C rtification Under 37 CFR 1.10**

**Express Mail Label No:** EV313040236US

**Date of Deposit:** November 4, 2003

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Christine Kierzek